



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/829,187  
Applicant : CHARLES N. SHAVER  
Filed : APRIL 22, 2004  
Title : EXPANSION CARD

Confirmation No. : 6057  
Art Unit : 2111  
Examiner : SPITTLE, MATTHEW D.

Atty Docket No. : 200314180-1

DECLARATION UNDER 37 C.F.R. § 1.131

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

1. The undersigned declarant is the inventor named in the above-identified application. This declaration is to establish completion of the invention claimed in the above application in the United States at a date prior to September 4, 2003, the date of the press release from Cyberdata Corporation entitled "4-Port Powered USB PCI Host Controller Provides Connectivity of Retail Peripherals to Standard PC's", a reference cited against the present application.

2. Accompanying Exhibits A and B are copies of pages, with dates redacted, from the invention disclosure and laboratory notebook, respectively, prepared and kept by myself.

3. Exhibits A and B describe how to make an USB-powered expansion card having an Accelerated Graphics Port (AGP) card connector configured to enable the expansion card to be inserted into an AGP expansion slot of a computer system. The expansion card has at least one USB port each adapted to mate with a USB-compatible peripheral device and a power connector matable with a corresponding power connector of the computer system, through which a power signal, doubled by a voltage doubling circuit, is received and routed to the USB port.

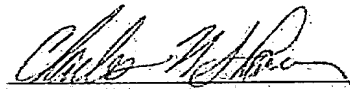
Application No.: 10/829,187  
Attny. Docket: 200314180-1

Declaration under 1.131


4. The invention disclosure of Exhibit A and laboratory notebook pages of Exhibit B are materials written and drawn by me prior to September 4, 2003, and show that I reduced my invention to practice in the United States prior to September 4, 2003.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued therefrom.

*Respectfully signed this 20th day of September, 2006.*

  
Charles N. Shaver  
Hewlett-Packard Company  
Cypress, TX 77429

**EXHIBIT A**  
**INVENTION DISCLOSURE STATEMENT**  
**10/829,187**  
**CHARLES N. SHAVER**  
**TITLE: EXPANSION CARD**  
**ATTY. DOCKET NO. 20314180-1**

 Enter PD Number



## INVENTION DISCLOSURE

Tag Number: T0004632

DATE RCVD: [REDACTED]  
PDNO: 200314180

ATTORNEY: KMH

All IPG inventors and other inventors who have access to Disclose should submit their disclosures through that application. The url is

< <https://wkrpweb1.cv.hp.com/dbi?application=disclose> >. Invention Disclosures submitted here by inventors who have access to Disclose will not be processed at all.

*Instructions: The information contained in this document is HP CONFIDENTIAL and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.*

*Red text indicates a required field.*

Descriptive Title of Invention: Alternate Usage of an AGP Slot	
Name of Project: Treasury - Fort Knox	
Product Name or Number: HP rp5000	
Submitter Location (City): Houston Texas	
Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s): No	
Was a product or prototype including the invention (i) announced, offered for sale, or sold to any third party (for example, customer, supplier, contract manufacturer), or (ii) sold to HP by, for example, a supplier or contract manufacturer, or (iii) is such activity proposed? If so, when and to whom?: Yes	
Product developed with third party in Taiwan - MSI	
Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s): Yes	
Since this was developed with MSI, they know about it.	
If any of the above situations will occur within 3 months, call your IP Attorney or the Legal Department now at 1-898-4919 or 970-898-4919	
Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.): Yes	
documented in schematics and power point slides showing card in the unit	
Was the invention built or tested? If so, the date: Yes	
first boards arrived in [REDACTED]	
Was this invention made under a government contract? If so, the agency and contract number: No	
Description of Invention: Please describe your invention in detail using the following outline. A. Prior solutions and their disadvantages (attach copies of any pertinent product literature, technical articles, patents, etc.). B. Problems solved by the invention. C. Advantages of the invention over what has been done before. D. Description of the construction and operation of the invention. (include appropriate schematic, block & timing diagrams, drawings, samples, graphs, flowcharts, computer listings, etc.). Electronic Attachment	
List any pertinent patents material to the invention. Electronic Attachment	
List any articles or references or devices pertinent to the invention. Electronic Attachment	
Identify Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [REDACTED]	


Employee No. 10010978	Name: Charlie Shaver	Telnet: 281-518-7453	Mailstop: 070601	Entity & Lab Name: PSG / Business PCs
Employee No.	Name:	Telnet:	Mailstop:	Entity & Lab Name:
Employee No.	Name:	Telnet:	Mailstop:	Entity & Lab Name:
<b>Identify Witness(es):</b> <i>(It's best to identify the person(s) to whom invention was first disclosed.)</i>				
The invention was first explained to, and understood by, the witness(es) on this date: November 2002				
Name: Chuck Stancil	Employee No.	Telnet: 281-514-4986	Mailstop:	Entity: PSG / Business PC
Name:	Employee No.	Telnet:	Mailstop:	Entity:
<b>Inventor &amp; Home Address Information:</b>				
First Inventor's Full Name: Charles Norman Shaver			Citizenship: USA	
Street 13630 Merilee Court				
City Cypress		State TX	Zip 77429	
Do you have a Residential P.O. Address? No		Description		
Second Inventor's Full Name:			Citizenship:	
Street				
City		State	Zip	
Do you have a Residential P.O. Address?		Description		
Third Inventor's Full Name:			Citizenship:	
Street				
City		State	Zip	
Do you have a Residential P.O. Address?		Description		

Hardcopy Files:



agp\_slot.zip

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	<b>INVENTION DISCLOSURE</b>	PAGE ONE OF ____
PDNO	DATE RCVD _____	ATTORNEY
<i>Instructions: The information contained in this document is HP Confidential and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.</i>		
<b>Descriptive Title of Invention:</b> Alternate Usage of an AGP Slot / Connector in a PC		
<b>Name of Project:</b> Treasury		
<b>Product Name or Number:</b> Fort Knox		
Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s): No		
Was a product or prototype including the invention (i) announced, offered for sale, or sold to any third party (for example, customer, supplier, contract manufacturer), or (ii) sold to HP by, for example, a supplier or contract manufacturer, or (iii) is such activity proposed? If so, when and to whom?: NO		
Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s): Our development partner, MSI, knows about our development of a card for the AGP slot that is not an AGP card. They don't know about filing a patent for the novel use of the AGP connector. MSI contacts: Roger Hsu, Franco Lai, Andy Kao, Andy Chen MSI has been aware of this card since _____		
<i>If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-898-4919 or 970-898-4919.</i>		
Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.) No, just schematics of the card, and a powerpoint slides showing how the chassis would look with the add-on card in the unit.		
Was the invention built or tested? If so, the date: First boards tested early _____		
Was this invention made under a government contract? If so, the agency and contract number: No		
<b>Description of Invention:</b> <i>Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).</i> A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.) B. Advantages of the invention over what has been done before. C. Problems solved by the invention. D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).		



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**Description of Invention:** *Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).*

A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.) A voltage doubling card that provides three USB+Power connectors. The voltage doubling circuitry produces one +24V USB+Power connection. The other two USB+Power connectors are powered by +12V. The card is inserted in to an AGP connector, but only the ground pins and the two USB signals are used from the AGP connector. Power is provided to the card using an IDE style power connector.

B. Advantages of the invention over what has been done before. A previous USB+Power card was placed in a PCI slot. This card had a PCI based USB device on it to provide the USB+Power ports. The invention uses existing USB ports already present in the chipset southbridge and it does not use up a PCI slot. The northbridge used in this product does not support a discrete graphics card, so the AGP slot that was present could be used for another purpose without penalty. The cost is lower since no USB hubs were needed to supply the three USB+Power ports that the card supplies.

C. Problems solved by the invention. The invention allows an AGP slot to be used to provide USB+Power ports for the Point-of-Sale (POS) market. The POS market is moving toward USB+Power connections and it is not possible to supply all the required ports at the rear panel of the chassis without designing the add-in card the fits in the AGP slot. The voltage doubling circuitry for a +24V USB+Power port will not easily fit on the motherboard, so the add-in card in the AGP slot is used to hold this circuitry as well. There is not a requirement for USB ports at the front of the chassis, so the cable used to supply this pair of ports is routed to the add-in card to allow for two USB+Power ports. The USB signals that are present on the AGP connector are used for to produce the third USB+Power port provided by the add-in card. The add-in card fits in the AGP slot and provides two +12V USB+Power connectors that come from the front USB cable and one +24V USB+Power connector that is routed from the pair. While not implemented on this add-in card, it would be possible to use a USB hub to expand the number of USB ports if cabling a pair of ports to the card is not an option. The pair of USB signals present on the AGP connector would simply attach to a USB hub that would expand the number of USB ports available.




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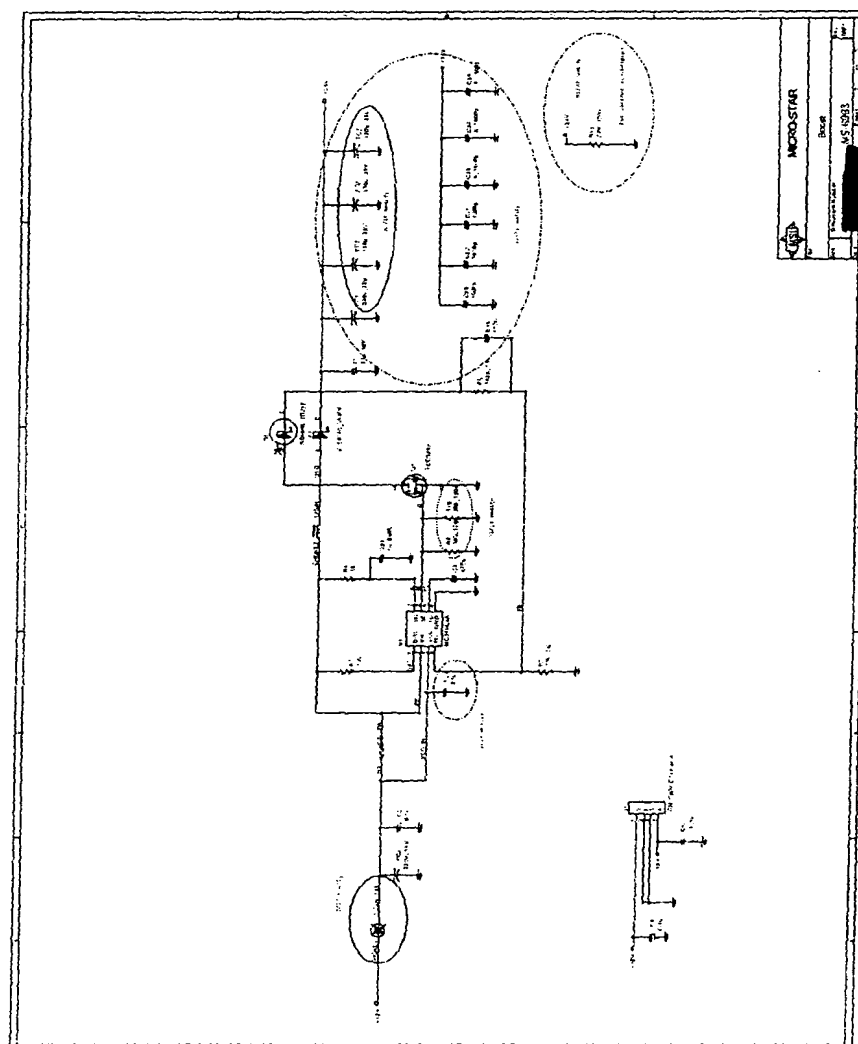
- D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.). The is a PCI add-in card that can be used to achieve three USB+Power ports, but it fits in a PCI slots and would use up one of the two PCI slots available to the user. Using the AGP slot for the USB\_Power ports, allows the user to have two PCI slots available for future expansion.

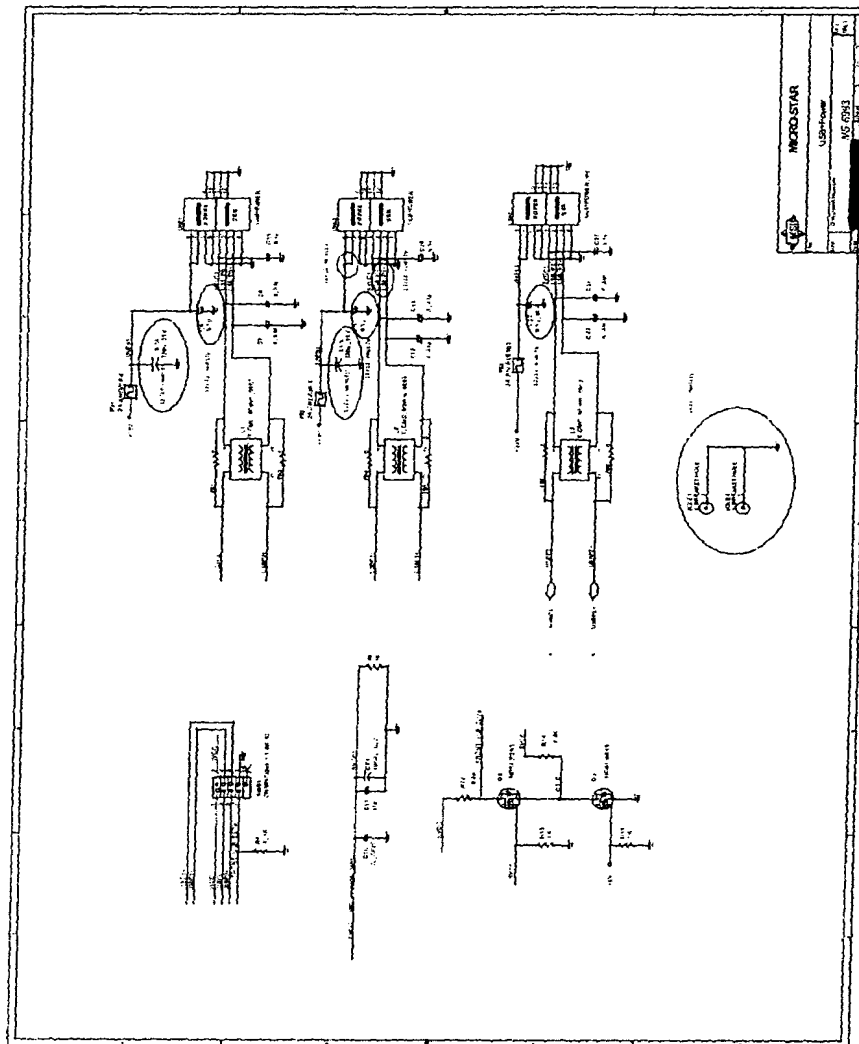
**EXHIBIT B**  
**LABORATORY NOTEBOOK PAGES**  
**10/829,187**  
**CHARLES N. SHAVER**  
**TITLE: EXPANSION CARD**  
**ATTY. DOCKET NO. 20314180-1**

# MS-6993 Ver:0A

COVER PAGE	1
Boost	2
USB+Power	3
AGP	4
HISTORY	5

 MICRO-STAR	
COVER PAGE	
Title	
Size	Document Number
Date	MS-6993
	Rev 0A E1
	Sheet 1 of 5

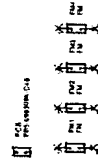
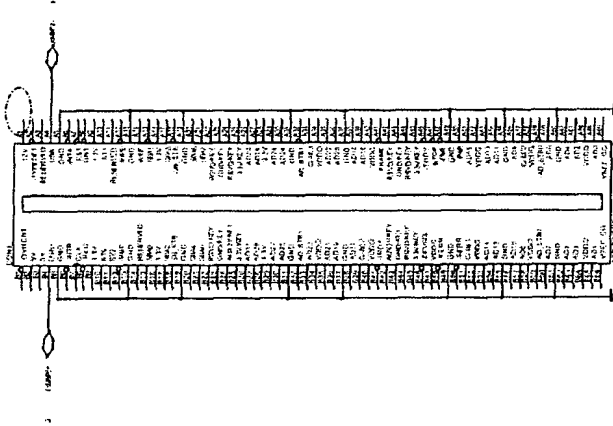




**MICROSTAR**  
 US-6943  
 MS-6943  
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STANDARD, INC.  
 TUBS/Custom Circuit Boards

AGP 1.5V 2X40(SLOT)(AGP VER2.0 COMPLY)  
 VCCS = 60mils trace / 15mils space



MICRO-STAR

AGP  
 MS-683

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